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Department of Agriculture
Department of Lands & Forests

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FROM: O.G. Bratvold and
G.R. Kerr

Edmonton, Alberta
DATE: October 15, 1973

TO: All Operating staff -
Department of Agriculture,
Department of Lands & Forests,
and others concerned.

Re: Problem Wildlife Management in Alberta

The attached Joint Program of Alberta Agriculture and Lands & Forests has been approved by both Ministers and Deputies as a policy document, and is provided for the guidance of operating staff in both Departments.

An attempt has been made to present a realistic outline of the historic background, conflicts of philosophy and interest, problems and possible solutions through joint action. Areas of responsibility and authority have been outlined where these are clear-cut. However in many instances there are joint or overlapping interests and responsibilities, and here success will depend on the cooperative support of all field and administrative staff.

The agreement does not spell out in detail the methods of management and control for individual species. This will be developed by the staff of both Departments with the advice of the Problem Wildlife Committee and supplied for the series of the Appendices.

We solicit your support for the optimum use of staff, facilities, expertise and resources in the management of problem wildlife, in the interests both of the public and wildlife.

O.G. Bratvold, Director
Plant Industry Division

G.R. Kerr, Director
Fish and Wildlife Division

Att'd.

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PROBLEM WILDLIFE MANAGEMENT IN ALBERTA

Joint Program of Alberta Agriculture and Lands & Forests

by

J.B. Gurba, Department of Agriculture

D.J. Neave, Department of Lands & Forests

August, 1973

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I. BACKGROUND

Prior to the settlement of Western Canada, native Indians and Eskimos used wildlife as basic sources of food and clothing. Fur traders were the first immigrants followed by farmer settlers. Both groups used wildlife in ways similar to the natives. Farmers and other settlers soon found that certain wildlife interfered with food production, or posed a threat to persons and property. Control action was taken through shooting, trapping, snaring and poisoning, without much government restriction.

As human settlement and development increased, government action was taken to protect fur bearers and other wildlife. Provincial governments retained jurisdiction over natural resources including wildlife. In Alberta the control of fish, game and fur bearers was administered by the Department of Agriculture until about 1941. At that time, the Fish and Game Branch was transferred to the Department of Lands and Forests. The Fur Farms Section remained in Agriculture. Control of predatory animals such as coyotes, wolves, cougars, magpies and crows was handled by Lands and Forests.

Various control mechanisms for problem wildlife were used, including bounties, professional trappers and contract hunters. In 1951, due to pressure from livestock producers, particularly sheepmen, the responsibility for coyote control in the agricultural (settled) area was transferred to Agriculture, with Lands and Forests retaining control of coyotes in the forest (green) area. The control of wolves, cougars, bears and other predators has remained the responsibility of Lands and Forests.

In 1958, responsibility for magpie control was split between Lands and Forests and Agriculture on the same basis as for coyotes, to discontinue the long-time, but generally ineffective, crow and magpie bounty. The control of field rodents, such as Richardson's (prairie gopher), Columbian and Franklin ground squirrels, pocket gophers, Norway rats, various mice and voles, mainly of concern to agriculture and horticulture, has remained the responsibility of Agriculture. Beaver control has remained the responsibility of Lands and Forests. The control of skunks and other rabies wildlife vectors was set up under a joint program in December, 1970.

II. PHILOSOPHY AND POLICY OF PROBLEM WILDLIFE MANAGEMENT

The policy and programs of management of problem wildlife have evolved over the years via tradition and through changing philosophy and rationale:

Department of Lands & Forests, Fish & Wildlife Division

While the Fish and Wildlife Division is not involved in a general predator control program for the protection of wildlife populations, the Division has the responsibility for control of predatory animals in the green area of the Province and problem wildlife management in the settled areas with the exception of certain species such as coyotes, magpies and rodents which are usually considered agricultural pests. The Division recognizes that some wildlife populations such as ducks and individuals of many species of wildlife, particularly carnivores and fur bearers, can create considerable damage to man's interests. The recognition of these problems can be seen from the following:

The overall purpose of the Wildlife Branch is to maintain and improve wildlife populations and wildlife habitat to perpetuate all forms of wildlife for the aesthetic, recreational and economic well-being of the people of Alberta.

The result is a program to remove problem wildlife animals, ungulates, fur bearers, carnivores and birds when they are damaging crops or livestock, highways or human health. The removal of animals can either be by directly killing them, often through longer seasons and/or bag limits in chronic problem areas, or live-trapping them for release in unsettled areas. Control programs are often balanced with prevention measures, where animals are excluded from areas by fences, decoy baits or repellents, and in some instances also balanced with compensation programs.

Generally predator control for the prevention of damage to other wildlife or other habitats is not an integral part of modern wildlife management. In fact the opposite: the maintenance of a healthy predator population to prevent high wildlife population densities is an integral part of wildlife management. Control for preservation of wildlife would only be recommended if it was shown that food supplies were underutilized, reproduction was high and predators were suppressing game numbers in a large area. Statements (3) and (6) of Policy (pages 4,5) should be emphasized as the implications of a cost-benefit analysis would include commercial and recreational aspects of wildlife.

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Department of Agriculture, Crop Protection & Pest Control Branch

The stated Purpose of the Branch is *"To provide a service in protecting crops and domestic animals from insect and animal pests, and plant diseases, and to provide for the proper management of agricultural chemicals."*

The Branch is divided into four specialized sections: Plant Industry Laboratory Services, Entomology, Plant Pathology and Animal Pests each headed by a supervisor. The latter section is responsible for management of problem wildlife (vertebrate pests) with the scientific and research support of the developing zoology section,Plant Industry Laboratory.

Basically the Objectives are: 1) To help people to help themselves in resolving problems by providing information, enabling legislation and the necessary resources 2) To provide the mechanism (system) through cooperative programs with municipalities and residents whereby realistic management of vertebrate pests is made practical and possible, with assistance as necessary.

The control of vertebrate pests is carried out through cooperative programs with municipalities, as with most pest programs. The Branch develops methods for prevention and control of pest damage, arranges for or supplies control materials, provides training for government and municipal personnel and landowners in the use of methods and techniques, and provides general supervision. Municipalities appoint pest control officers who are responsible for training, supplying control materials, and providing supervision of and assistance to landowners within the municipality. Each resident is expected to look after his own problem with assistance provided where and when deemed necessary.

The programs are flexible to allow for the management of different pest species and changing conditions between farms and across the province. Thus for Norway rats a total extermination program is operated with the cooperative action of each resident expected and enforced if necessary. For field rodents such as gophers, ground squirrels and mice, practical control methods are developed and information is supplied through printed publications.

District Agriculturists and other extension specialists provide information through printed publications, news media, public meetings and direct contact. Municipal officers supply information and various control methods and materials e.g. rat bait, pocket gopher burrow-builder machines, magpie traps, coyote control devices, etc. to assist landowners with individual problems. With the exception of N. rats where total species control or exclusion is practiced, the general objective is reduction or economic control of pest damage rather than control of the species per se.

Coyote control is left to the decision of the land or livestock owner. Grain farmers generally prefer to preserve the coyote for assistance in rodent control. Cattlemen will usually control coyotes only if losses occur whereas sheepmen generally carry out year-round coyote control since damage is considered a constant threat. The Department of Agriculture attempts to keep coyote control flexible enough to accommodate the wide-ranging interests within the agriculture industry. The program is directed at coyote damage control through the selective removal of offending animals. This program has over 23 years had little effect on the over-all coyote population.

However it should be recognized that selective control using non-lethal humane methods is much easier in theory than in practise. Considerable research and field development is necessary to implement an effective, practical system. The employment of predator specialists, on a one year trial basis, to assist with special problem cases, is a step toward the objective of reducing or controlling coyote damage by the use of the most effective methods for removing offending animals.

In May, 1972 the Department adopted the policy statement prepared by the Wildlife Society and by the addition of a seventh point, officially announced a Policy Statement on Vertebrate Pest Control:

"In the management of vertebrate wildlife pests and the control of damage by nuisance animals, basically we:

1. Recognize that wild animals have both negative and positive social and economic values and certain species may damage human interests, other wildlife, or other habitats, necessitating prevention or control of such damage as an integral part of wildlife management.
2. Encourage the use of techniques known to be of value in counteracting damage situations including:
   i) exclusion or mechanical protection
   ii) use of repellent chemicals or devices
   iii) environmental or biological control of offending populations
   iv) reduction of the number of offending individuals or local populations through transfer or lethal control.
3. Encourage that lethal control, where employed, be related to social and economical benefits and that the minimum necessary be used in order to bring damage within tolerable limits.

4. Encourage control methods as efficient, safe, economical, humane, and as selective as possible.
5. Encourage and support in principle continuing research in animal ecology and in methods of damage prevention and control in order to determine when and how much control is necessary and to develop optimum methods for its accomplishment.
6. Encourage that animal control programs be thoroughly planned, justified, carried out, and evaluated on the basis of total social benefits.
7. Wherever possible and practical, encourage that all necessary wildlife control programs be coupled with scientific utilization programs in order to enhance beneficial returns from control programs and promote better utilization of our wildlife resources."

With the gradual change in public philosophy to predator management and the banning or severe restriction of predacides in the United States, there is a need for a clear statement of governmental policy on problem wildlife management in Alberta. While we do not have a Canadian study on control of nuisance wildlife such as the U.S. Cain Report, we can use the U.S. experience, expertise and recommendations, without experiencing their mistakes. The joint responsibilities and interests of the Departments of Lands and Forests, and Agriculture have resulted in the need for a joint statement. This statement, outlining responsibilities and activities, will provide a better service to all public concerns and will allow cooperative work, where required, between the two Departments and with the Municipalities. This statement will not create a Predator Control Authority of any type but should lead to the re-establishment of an advisory and liaison Problem Wildlife Committee (formerly known as the Predator, Wildlife and Conservation Committee).

II. CURRENT RELATIVE LEGISLATION

The following federal and provincial legislation has a bearing on control of vertebrate pests and the use of animal toxicants:

a) Federal Acts

1. Pest Control Products Act - registration, classification for use, evaluation and sale of pest control products, etc.
2. Food and Drugs Act - regulation of contamination in food, etc.
3. Feeds Act - regulation of contamination in feeds, etc.
4. Migratory Birds Convention Act - prohibits harm to migratory birds, etc.
5. Fisheries Act - prohibits harm to fish and the use of substances that might contaminate waters inhabited by fish, etc.
6. Hazardous Substances Act - regulation of sale and use of hazardous materials, etc.
7. Criminal Code - deals with cruelty to animals, etc.

b) Provincial Acts

1. Agricultural Pests Act - provides for the control of five declared agricultural pests including the Norway rat and coyote, etc. A revision is underway.
2. Setting of Poison Act - regulation of the use of poison to control gophers, coyotes and wolves, and two named predators, magpie and skunk, etc. A complete revision is necessary.
3. Alberta Pharmaceutical Association Act - regulates the sale of poisons, etc.
4. Public Health Act - regulates matters necessary for public health, etc.
5. Wildlife Act - provides for the protection of wildlife, allows hunting of game birds and animals, taking of fur bearers and fur bearing carnivores, etc. Definition of wildlife, General Game Regulations, Game Hunting Regulations, Wildlife Damage Fund Regulations. On most private land, landowners can protect their property throughout the year from most problem wildlife.
6. Agricultural Chemicals Act (Dept. of Environment) - controls use and application of all agricultural chemicals including animal poisons, requires permits for more hazardous compounds but exempts poisons used under the Agricultural Pests Act and the Setting of Poison Act, etc.
7. Municipal Government Act - permits enactment of bylaws to control pests and nuisances, etc.

IV. CURRENT MANAGEMENT OF PROBLEM WILDLIFE

The three types of action which have been employed by the Department of Agriculture and the Department of Lands and Forests to reduce, alleviate or solve conflicts involving animals and other interests are:

1) Compensation. With the introduction of a Wildlife Certificate ($3.00 levy on each hunting license) and creation of the Wildlife Damage Fund in 1964, compensation to a maximum of $15.00 per acre has been paid to farmers suffering losses to standing or swathed crops of cereal grains. The cost of compensation almost exclusively due to ducks has varied from $28,000 to $950,000 per year, averaging at $350,000 in the eight years. This cost is paying only 1/3 of the value of the crop and with less than a third of the damage being reported. Damage is estimated in excess of 3 million dollars per year.

2) Management of species populations by commercial trapping and recreational hunting season adjustments. Season dates and possibly bag limits can alleviate damage problems. Late season elk hunts, for example, have effectively eliminated elk depredation on hay stacks.

3) Control - There are four methods of control, used singly or in combination:
   a) Damage reduction by removing individual animals involved in a damage problem.
   b) Preventive techniques in scaring or repelling animals from a potential damage area.
   c) Exclusion by use of fencing or other barriers (or keeping potential pests out of Alberta as with Norway rats).
   d) Lure crops or other environmental manipulation to keep animals out of potential damage areas.

Direct lethal control action is taken only after some verification of damage and is directed against the offending individual(s). Where a hide has a monetary value, resident or registered trappers are employed. Control action includes activities aimed at beaver along roads, wolves attacking livestock and coyotes attacking sheep. The rat control program along the Saskatchewan border and the joint rabies vector control program involving the skunk buffer zone along the east border and radial depopulation for positive cases, have both been highly successful.

Preventive control actions are the most successful in the long-term. However considerable research is required for practical, economic methods.

Lure crops or bait stations in areas of high and chronic duck damage, will reduce damage to cereal crops. Similarly electric fencing bee-yards can reduce bear damage, a modified culvert design can prevent beaver flooding problems or removal of carrion can reduce coyote numbers.

The decision to implement different controls for certain problem wildlife depends less on the amount of damage and more on the traditional role of the individual species of wildlife. While large carnivores have traditionally been the nemesis of the agricultural community, elk and waterfowl are protected through compensation and control programs. The following is a summary of methods employed for problem wildlife management. These methods will be elaborated on in greater detail and per species in the Appendices.

Ungulates (Appendix I)

The general procedure followed by the Fish and Wildlife Division in cases involving ungulate (e.g. elk and deer) depredation is:

1) All complaints are investigated by the District Fish and Wildlife Officer.
2) If the incidence of damage is scattered and light, it is usually recommended that the farmer fence the stack with board slabs. No compensation is provided for stacked forage crops or stored grain.
3) If damage continues, exploders or shotguns are used to scare the animals.
4) In the case of unstored forage crops or unharvested grain, the Alberta Hail Insurance Board makes an assessment of damage and compensation is paid for damage until December 31.
5) If the damage problem is chronic, hunting seasons are adjusted to reduce damage.
6) In no case is a damage permit issued for the destruction of ungulates involved in a depredation problem.

Waterfowl and Other Game Birds (Appendix II)

The general procedure followed by the Fish and Wildlife Division in cases involving game birds (e.g. ducks, geese, cranes) is:

1) The complaint is investigated by the District Fish and Wildlife Officer.
2) If damage occurs prior to or after the hunting season a damage permit is issued for a specified period of time. The farmer must keep a record of the number of birds destroyed. Exploders can be provided to scare birds.
3) If damage occurs after the opening of the hunting season the District Fish and Wildlife Officer assists the farmer in contacting licenced waterfowl hunters to remove and/or scare the offending animals.

4) If the above measures fail to eliminate the incidence of damage, the amount of damage is assessed and compensation is provided.

5) If the damage problem is chronic, preventive action may be taken through bait stations and lure crops where it is economically feasible on a cost:benefit analysis.

Non Game Birds (Apppendix III)

1) Complaints of damage by nuisance birds such as magpies, blackbirds, pigeons, and starlings need to be monitored in order to identify the extent of damage. Further research is required for practical controls.

2) Agriculture provides printed information for damage control for such species as magpies, starlings, blackbirds, etc. Poisoning of magpies with strychnine baits is allowed during the winter by prescribed methods but is being replaced by the effective circular live trap developed recently.

Furbearers and Carnivores (Appendix IV)

1) The complaint is investigated by the District Fish and Wildlife Officer. Some complaints are not valid as evidence is lacking of either a kill (rather than disappearance of livestock) or death caused by a predator.

2) Appropriate control action is instituted when necessary:

e.g.	Beaver -	encouragement of trapping during winter by resident trappers and hiring trappers during summer whenever possible.
	Wolves -	trapping and poisoning at locations of known kills.
	Rabies Control -	poisoning and trapping of skunks in depopulation zones.
	Bear Control -	trapping at damaged yards through leg snares and culvert traps.

3) There will be total utilization of the hide and carcass where possible in the program.

4) Preventive control measures are to be taken by the owner wherever possible.

5) Coyote control is a joint program of the Department of Agriculture and some 80 cooperating municipalities directed at reducing and where possible eliminating damage on livestock farms.

Rodents (Appendix V)

The general objective is to provide for the control of damaging rodents and to keep Alberta rat-free through the following procedures:

1. The Norway rat is a declared pest under the Agricultural Pests Act requiring prevention of establishment and active control by every person, agency and municipality.
2. Agriculture provides provincial coordination and supervision, develops control methods, supplies information and other assistance, training, free bait and grants to municipalities.
3. Two full-time officers of the Pest Control Branch coordinate control activities and assist some 250 pest control officers appointed by urban and rural municipalities to handle local problems.
4. The main work is done in 8 municipalities along the east border where some 3,500 premises are periodically checked and baited as necessary. The 50% grant paid for the cost of 6 municipal P.C.O.s was recently increased to 75%.
5. Anti-coagulant poisons (warfarin) are the main control technique, supplied free of charge to municipalities and residents. Continuous testing and evaluation of rodenticides and other controls is carried out.
6. All known methods of rat prevention and control are used including rat-proofing of structures, clean-up of food and harborage, proper disposal of garbage, trapping, shooting, gassing, etc. with emphasis on individual responsibility and community effort.
7. For other rodents such as ground squirrels, pocket gophers, mice and voles, investigation and field research are carried on to develop practical, safe control measures. Some successful developments are the pocket gopher burrow builder machine and gophacide to replace strychnine bait; effective traps for mice, gophers, ground squirrels and skunks.

   Richardson ground squirrel field research has continued for 3 years to develop alternatives to strychnine baiting e.g. anti-fertility agents. Printed information is supplied to residents on the best known control methods. Assistance is provided by provincial and municipal P.C.O.s as necessary.

General: In all cases an accurate documentation of the extent of reported damage is necessary. The actual incidence and distribution of the problems are necessary, especially for future evaluations of control programs on a cost:benefit analysis.

V. GENERAL AGREEMENT ON CODE OF OPERATIONS FOR JOINT PROGRAM

1. The basic reason for this brief and cooperation between the two Departments is to ascertain that the sometimes conflicting interests of agriculture and wildlife are reconciled and accommodated in the management program. This agreement should also lead to optimum use of existing staff, facilities, expertise and resources.
2. The basic goal in problem wildlife control is to provide service to the public, while maintaining an optimum wildlife population level. In recognizing that residents have the right to protect their person and property, the government will provide the mechanism by legislation, programs, approved methods, and assistance as necessary, to make this possible.
3. The government through both departments should develop a definite policy and programs and announce these publicly in order that all staff and the general public know what can and what cannot be legally done.
4. To ensure that coordination and liaison of policy and program is maintained, it is recommended that there be established a Problem Wildlife Committee, which would have representatives from both departments and possibly from other agencies and which would function as an advisory, coordinating and operational group. This committee would meet as necessary to consider all aspects of vertebrate pests, but at least annually, report to both Ministers and liaison with other organizations such as the A.D.A. Pest Control Advisory Committee. Regional and specific topic subcommittees may also be necessary.
5. There is a need to review and document the extent and amount of the various problems, estimate cost of control and initiate research for solutions. Research requests and supporting grants should be made through respective agencies for continuing research in animal ecology, and methods of damage prevention and control.
6. Continual review and scrutiny is required on legislation to ensure that the public maintains its right for protection of persons and property, and to avoid conflicting legislation in the long term. There are several short term requirements: i) Revision of the Agricultural Pests Act to change the status of the coyote from declared "pest" to "nuisance animal", thereby making control possible but not mandatory. Other "nuisance animals"

considered likely for future declaration and coverage are the various ground squirrels (gophers), pocket gophers, and possibly the skunk and magpie. It is agreed that no game bird, game animal or bird of prey will be declared a "nuisance animal"; ii) The Setting of Poison Act will be revised to up-date and to remove conflicts with the Agricultural Pests Act and the Agricultural Chemicals Act.

7. All staff from both departments involved in problem wildlife control will be properly trained and periodically up-dated on animal ecology and methods of damage prevention and control. Special training courses, such as the A.D.A. Annual Animal Damage Control Seminar, should be jointly planned, supported and implemented for the continuing training of staffs of both Departments, predator specialists, municipal pest control officers, grazing association managers, etc. A Procedures Manual is required for operating staff of both Departments and will be prepared as a cooperative project.

8. Coyote control is important to many farmers and ranchers and should remain as established in 1951 with Agriculture responsible for the agricultural (settled) region and Lands and Forests responsible for the forest (green) region. It is agreed that each department and its staff will consult with the other in any action affecting the others region. This includes the use of any poisons or other control methods and also the implementation of restrictive legislation or other restrictions.

The Department of Lands and Forests will, however, develop a management program in the settled areas of the Province, especially to encourage coyote trapping by resident trappers. Registered trap lines could be made in many of the grazing leases and reserves and community pastures.

Coordination, joint action and mutual assistance are essential in the fringe area of settlement along the forest region, in the provision of permits for the use of power toboggans by selected government staff, municipal pest control officers, regional predator specialists and certain landowners with damage problems.

It is recommended that for practical working purposes, jurisdiction for staff of both departments should be extended to cover a buffer zone extending two miles in both directions from the settled-green area boundary.

9. Control of wolves, cougars, bears and other predators, waterfowl, ungulates and fur bearers shall remain the responsibility of Lands and Forests throughout the province. There are occasional serious problems in the fringe area of settlement along the forest region. Rapid action will be taken to investigate all complaints and if necessary remove or destroy offending animals. Where prompt action is not possible or practical by Lands and Forests staff, the assistance of agricultural and municipal staff and predator specialists will be solicited.
10. The joint program for control of skunks, bats and other rabies wildlife vectors shall remain as established on December 30, 1970 with future changes as necessary and agreed upon under the Central Rabies Control Committee.
11. Bear damage control in bee yards is a serious problem especially in certain parts of northern Alberta. Lands and Forests will supervise a program in the Peace River region and other fringe settlement areas. The program, similar to the 1972 pilot project in the Falher area, will be operated utilizing the assistance of agricultural and municipal pest control officers and predator specialists to work with beekeepers and other residents in prevention and control of bear damage.
12. Beaver flood damage will remain the responsibility of Lands and Forests, working with the Water Resources Division and affected municipalities. Wherever possible trappers and predator specialists will be used to prevent and control flood damage.
13. Waterfowl damage will remain the responsibility of Lands and Forests. Other nuisance birds, such as blackbirds damaging corn and sunflowers, starlings and English sparrows, etc., need to be considered in research and possible damage compensation.
14. The control of field rodents, such as various ground squirrels, pocket gophers, Norway rats, various mice and voles, mainly of concern to agriculture and horticulture, shall remain within the jurisdiction of Agriculture.
15. The use of predacides, such as strychnine, cyanide guns and 1080, in general predator control will be decreased, especially from public use. Research on alternative methods of management and damage control will be encouraged and such methods implemented as soon as practical.

16. The trial concept of using trained regional predator specialists is well received by municipalities and landowners for handling "problem" coyote cases. The landowner pays a nominal fee and action is generally coordinated and supervised by the local municipality. Specialists should be used as much as possible by both Departments for various aspects of problem wildlife work. The best eventual mechanism is likely a contract basis, under municipal or other local supervision.
17. Close liaison must be maintained with vested interest groups and acceptable mechanisms developed for recovering some of the expenditure costs from individuals, organizations and municipalities, as well as funding from general revenue.
18. The principle of high risk areas has to be accepted by agricultural interests where new activities, such as livestock production in fringe agricultural areas, are attempted. Small fields surrounded by bush should not be used for sheep production without the individual accepting predictable losses. If "all-risk" insurance is implemented, such high risk situations should be reflected in the premiums levied.

VI. FUTURE MANAGEMENT OF PROBLEM WILDLIFE

As outlined under item 4 of the General Agreement, the Problem Wildlife Committee, once established, should function as an advisory, coordinating and operational group on all aspects of vertebrate pests. Future management policy and programs should be under continual scrutiny and review by the Committee, as well as by involved members of both Departments.

However there are a number of current developments and concerns that are itemized here for future reference :

1) The problem wildlife team developed in the Fish and Wildlife Division in 1973 has the major objective of handling any significant wildlife problems affecting agriculture or other interests. Control efforts will be balanced to economical returns and to long term preventive measures. Local landowners and trappers will be utilized as much as possible for both preventive and individual animal removal programs.
2) The predator specialists, employed by the Crop Protection and Pest Control Branch on a trial basis during 1973-74, have been well accepted by municipalities and landowners for handling "problem" coyote cases. Such

specially trained, equipped and experienced operators have a place in the future management system. The main problem is the development of an acceptable scheme under which both Departments could use these specialists on a year-round basis, to handle various problem wildlife. The best eventual mechanism is likely a contract basis, under municipal or other local supervision, and funded by landowners serviced or other interest group(s) and both Departments.

3) A Procedures Manual for all personnel involved is urgently needed. Action should commence as soon as possible by the staffs of both Departments to assemble and provide printed information on control methods and techniques for the various problem wildlife species. Such a Manual would serve as the operating reference for staff and the background for special training courses.

4) There is need for review and documentation of the extent and cost of wildlife damage on a regional and provincial basis and a cost-benefit analysis of damage prevention and control.

5) Research should be initiated by both Departments, and funded through grants to research agencies, to provide up-dated information on animal ecology and methods of damage prevention and control.

6) Study is required of funding mechanisms to consider and recover the appropriate share of costs from individuals, vested interest groups, municipalities and other organizations, as well as from public funds.

PRESENT COSTS OF PROBLEM WILDLIFE MANAGEMENT

1973-74 Costs

LANDS AND FORESTS: (includes direct staff, travel, equipment, materials, grants)

Furbearers, Carnivores and Ungulates:

Wildlife Section -	$ 50,000
Enforcement Section - (administrative support, salaries and vehicle purchases excluded)	70,000

Waterfowl:

Wildlife Damage Fund ($3.00/hunter licence) -	375,000
Federal Cost-Shared Program - (includes administrative costs and salaries)	300,000

AGRICULTURE: (includes direct staff, travel, equipment, materials, grants)

	1970-71	1971-72	1972-73	1973-74 Est.
Rodent Control - (Rats, gr. squirrels)	40,000	51,000	55,000	69,000
Animal Pests - (Coyotes, nuisance animals & birds)	15,000	23,000	38,000	35,400
Predator Specialists -	-	-	14,400 (3 mo.)	75,000
Rabies Vector Control:				
Agriculture -	19,530	57,000	27,700	32,560
Lands & Forests -				28,000

MUNICIPALITIES:

RESEARCH:- Canadian Wildlife Service, Universities

INDUSTRY:- bee keepers, cattlemen, sheepmen, crop producers

Sale Value and Estimated Losses

	TOTAL VALUE		TOTAL LOSS	
Industry:	1971	1972	1971	1972
Sheep	1.6m	2.6m	214,000	67,000 (coyotes)
Cattle	290m	300m		
Honey	4.5m	6.2m		
Grain	319m	371m	3 to 5 million $ (waterfowl)	

APPENDICES

APPENDIX I: UNGULATES

APPENDIX II: WATERFOWL AND OTHER GAME BIRDS

APPENDIX III: NON-GAME BIRDS

APPENDIX IV: FURBEARERS AND CARNIVORES

APPENDIX V: RODENTS

- *to be developed initially by those staff involved in both Departments, then periodically reviewed and up-dated by special topic or task groups under the aegis of the Problem Wildlife Committee.*